

REMARKS

Reconsideration of this application is respectfully requested in view of the following remarks.

Claims 2-24 were pending in this application. Applicant has not amended, canceled, or added any claims in this Request for Reconsideration. Claims 2-24 will therefore still be pending upon entry of this Request for Reconsideration. Applicant has included the above list of claims for the Examiner's convenience.

In the Office Action mailed November 26, 2008, claims 8 and 10-12 were allowed. Regarding claims 2-7, 9, and 13-22, the previous grounds of rejection were withdrawn and new grounds of rejection were set forth. In particular, claims 2, 5-7, 9, and 13-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,941,110 to Kloper et al. ("Kloper") in view of U.S. Publication 2004/0047324 to Diener ("Diener"); and claims 3-4 and 21-24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kloper in view of Diener and further in view of U.S. Publication 2006/0176850 to Gan et al. ("Gan"). Applicant respectfully traverses those rejections.

Allowable Subject Matter

Applicant acknowledges with thanks the Examiner's allowance of claims 8 and 10-12.

Rejection Of Claims 2, 5-7, 9, And 13-20 Under 35 U.S.C. § 103(a)

The rejection of independent claims 2 and 13 is respectfully traversed because the cited art fails to teach or suggest the complete combination of features recited in the rejected claims.

Claim 2 recites, for example, a method for avoiding interference in a radio communications band, wherein hopping frequencies employed by a first RF device cluster in one or more frequency ranges within the radio communications band, wherein during clustering, a second frequency range within the radio communications band is not occupied by any channel used by the first RF device, the second frequency range being continuous and having a width corresponding to a plurality of channels capable of transmitting communications of the first RF device. Claim 13 recites a system comprising an RF module that is configured to perform the clustering process recited in claim 2.

As detailed below, the recited clustering process relates to a system and process for avoiding interference in a radio communications band that deliberately provides not only at least a first range of frequencies in which a set of permissible transmission channels for a first frequency hopping device cluster, but additionally provides a second range of frequencies that is continuous and capable of supporting a plurality of channels capable of carrying frequency hopping transmission. In other words, the second range of frequencies that is kept open allows an additional frequency hopping device to occupy the second range by allocating space for transmission channels in the second range. This helps avoid interference between the first frequency hopping device and the second device by taking advantage of the adaptive capabilities of many frequency hopping devices.

This inventive feature can be further understood with the aid of Figures 10 and 11a-11b. Figure 10 illustrates an example of interference between a first frequency hopping device (WDCT) and an interferer (BT) that is (in this case) a second frequency hopping device. As shown, both devices employ a large number of channels that span the frequency range of the

radio communications band (total available bandwidth), in which several hop frequencies employed by the WDCT device overlap with BT hop frequencies, thereby potentially causing interference between the devices.

Figure 11a illustrates an example of clustering employed by the WDCT device in accordance with the aspect of the invention recited in claims 2, 13, and 21. The channels assigned to the WDCT device during clustering are all in the lower frequency range of the communications band, wherein no channels of the WDCT hop sequence are in the high frequency range ("a second frequency range within the radio communications band is not occupied by any channel used by the first device"). The unoccupied frequency range corresponds to a range that can accommodate a plurality of communications channels that could otherwise carry WDCT (or BT) communications ("the second frequency range having a width corresponding to a plurality of contiguous channels capable of transmitting communications of the first RF device").

One aspect of the inventive clustering process is illustrated in Figure 11b, where an interferer that is a second FHSS device (BT) produces a hop sequence in which the channels used in the hop sequence are located in the unoccupied (by the WDCT device during clustering) frequency range. As discussed at paragraph [0044] of the present specification, an FHSS interferer that has adaptive frequency hopping capability can adjust frequencies used in its hop sequence to avoid detected collisions with another interferer (the WDCT and BT channel overlap illustrated in the low frequency range of Figure 11a). Thus, in accordance with the present invention, a first FHSS device facilitates avoidance of interference with a second FHSS device

by "inducing" the second FHSS device to use its adaptive capability to populate its hop channels in a frequency range left unoccupied by the first FHSS device.

Figure 13, in conjunction with Figure 14a, illustrates a variant of the above-described process, in which the first FHSS device (WDCT) clusters in a first frequency range that provides a second frequency unoccupied by the WDCT device, in which an 802.11b band interferer is present and in which an open sub-range exists at the highest frequency range of the communications band, so that the open sub-range is eventually occupied by a BT device that employs adaptive hopping (Figure 14a).

Although Diener is relied upon as teaching the inventive clustering process recited in claim 2, Diener fails to teach or suggest a process in which hopping frequencies employed by a first RF device cluster in one or more frequency ranges within a radio communications band, wherein during clustering, a second frequency range within the radio communications band is not occupied by any channel used by the first RF device, the second frequency range being continuous and having a width corresponding to a plurality of channels capable of transmitting communications of the first RF device, as recited in claim 2.

In particular, paragraph [0101] of Diener, cited by the Examiner, discloses that a classification engine 52 (depicted as part of a processor in Figure 6) can be used to "detect, for example, signals that interfere with the operation of one or more devices" while the "classification output may be, for example, 'cordless phone', 'frequency hopper device', 'frequency hopper cordless phone', 'microwave oven', '802.11x WLAN device', etc." However, Diener, by merely disclosing the classification of interferers as to the type of interference, fails to teach or suggest clustering hopping frequencies of a first RF device in a first

frequency range within a radio communications band, let alone providing a second frequency range in the radio communications band unoccupied by the first RF device, wherein the second frequency range is continuous and has a width corresponding to a plurality of channels capable of transmitting communications of the first RF device.

Accordingly, Applicant respectfully submits that independent claims 2 and 13, as well as dependent claims 5-7, 9, and 14-20, each of which depends from either claim 2 or 13, are patentable over the cited art.

Rejection Of Claims 3-4 And 21-24 Under 35 U.S.C. § 103(a)

Applicant respectfully submits that dependent claims 3-4 and 23-24 are patentable over Kloper in view of Diener, at least for the reasons discussed above with respect to base claims 2 and 13. Nor does Gan address the deficiencies in the teachings of Kloper and Diener. Accordingly, Applicant respectfully submits that claims 3-4 and 23-24 are patentable over the cited art.

Moreover, at least for the same reasons as apply to claims 2 and 13, independent claim 21, which recites the aspects of the inventive clustering process discussed above, and its dependent claim 22, should be patentable over Kloper in view of Diener and Gan.

In view of the foregoing, all of the claims in this case are believed to be in condition for allowance. Should the Examiner have any questions or determine that any further action is desirable to place this application in even better condition for issue, the Examiner is encouraged to telephone Applicant's undersigned representative at the number listed below.

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Respectfully submitted

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